

3.4 Kettleman City

Daily minimum, maximum, and average values of temperature (T), relative humidity (RH), scalar wind speed (S), and standard deviation of the unit vector wind direction (σ_θ) are listed in Tables 15, 16, 17, and 18. In addition, unit vector wind direction (θ) and vector wind speed (U) for each day are also listed in these tables. The 5-min values of θ and U were used to construct wind roses for June, July, August, and September which are shown in Figures 33, 34, 35, and 36, respectively.

Average high temperatures at the Kettleman City site ranged from 32 to 35 °C with lows of about 15 °C. Average relative humidity values in the day were generally low averaging about 20 to 25%, however, values at night were somewhat high at 80%. These relatively high humidity values may be due to evaporation of water from the holding ponds that were located near the meteorology tower. Daily average scalar wind speeds were about 3 m s^{-1} . Wind flow at this site was predominately from the northwest quadrant. The monthly wind roses suggest a bimodal distribution with the predominate winds from the west-northwest and the north-northwest.

Table 15. Kettleman City monthly weather and wind summary for June.

Day	T (°C)			RH (%)			S (m s ⁻¹)			θ (deg)	U (m s ⁻¹)	φ _θ (deg)		
	min	max	avg	min	max	avg	min	max	avg			min	max	avg
1	9.5	35.6	22.7	10.5	65.2	33.0	0.4	4.7	2.6	331.1	1.4	0.4	76.9	15.2
2	14.8	36.6	25.3	11.9	56.6	31.9	0.7	6.5	3.5	321.9	3.0	1.6	48.1	11.3
3	14.9	34.6	24.8	15.2	73.7	40.9	1.1	5.1	3.1	321.8	2.5	1.0	50.8	10.8
4	15.4	40.8	27.3	11.2	69.3	35.0	0.6	7.8	3.8	289.7	1.6	1.0	56.9	11.6
5	12.4	29.0	20.4	17.1	77.0	46.7	1.1	7.2	4.3	334.8	3.8	0.9	25.4	8.9
6	14.5	33.2	23.8	24.0	80.9	48.2	1.2	6.1	3.3	331.8	2.7	0.7	61.1	11.3
7	15.3	33.0	23.1	15.9	61.5	38.6	1.2	7.9	4.1	305.7	2.5	3.0	70.9	12.3
8	13.1	19.6	16.7	57.3	93.5	75.0	0.3	8.3	3.7	337.0	2.4	2.2	38.5	8.9
9	10.0	24.1	17.2	43.5	97.1	69.9	0.4*	5.5*	2.6*	321.9*	1.8*	1.6	55.4	12.3
10	11.0	25.8	18.5	37.1	93.3	65.1	1.5*	5.1*	3.3*	335.1*	2.9*	1.5	35.6	9.3
11	11.8	27.9	20.0	24.3	85.1	56.3	1.2	5.7	3.6	327.7	3.2	1.2	28.3	7.8
12	15.0	30.5	22.8	35.2	80.1	58.5	0.9	7.3	3.8	335.5	3.3	0.8	39.5	7.8
13	17.2	32.7	25.6	38.9	80.9	60.4	0.3	8.9	4.2	340.3	3.5	0.8	66.8	8.8
14	19.3	39.2	29.0	26.1	89.0	57.5	0.3	4.9	2.5	316.1	1.9	0.6	72.8	9.2
15	20.7	37.9	30.2	25.6	83.3	49.6	0.4	6.6	3.2	325.8	2.4	0.9	58.9	10.7
16	20.1	36.7	29.0	26.9	73.0	47.8	1.2	5.2	3.2	316.6	2.4	0.8	68.8	7.7
17	19.4	34.0	27.2	31.3	82.7	51.0	0.8	6.9	3.8	331.6	3.0	1.2	53.5	7.7
18	17.6	31.9	24.4	35.7	86.9	61.0	0.9	6.3	3.3	331.2	2.9	1.3	53.4	9.7
19	16.0	31.5	24.0	32.3	88.2	60.8	1.1	6.2	3.1	319.2	2.7	0.8	57.8	10.0
20	18.8	35.5	27.4	30.8	79.9	52.6	1.0	5.9	3.4	315.0	2.6	1.0	33.8	8.2
21	19.7	36.3	28.4	22.9	79.7	49.2	0.6	6.2	3.0	322.0	2.3	0.5	49.5	8.0
22	19.9	41.3	29.8	17.6	72.4	42.2	0.8	4.8	3.1	333.2	2.0	0.6	44.1	7.8
23	18.0	39.6	27.4	15.6	74.6	45.7	0.5	5.6	2.6	322.8	1.9	1.6	44.1	11.0
24	18.1	35.6	26.3	22.0	80.8	52.5	0.8	5.4	3.0	326.8	2.5	1.3	51.0	10.5
25	18.1	34.3	26.3	26.8	84.1	52.8	1.0	5.5	3.2	317.5	2.8	1.1	66.6	9.1
26	19.6	36.3	27.5	21.9	69.2	45.6	0.8	5.2	3.3	315.4	2.8	0.9	43.6	7.5
27	20.3	37.1	28.9	19.0	69.3	43.8	0.7	5.2	3.1	314.0	2.5	0.9	37.8	8.1
28	20.3	38.5	29.1	16.0	67.0	41.0	1.3	4.9	3.2	319.4	2.5	0.8	26.0	7.2
29	20.1	41.0	28.8	12.6	59.0	38.0	0.4	4.9	2.9	313.1	1.9	0.8	59.5	10.1
30	18.4	35.1	26.7	15.1	67.6	42.1	0.7	6.0	3.1	327.4	2.7	0.9	46.5	10.0
min	9.5	19.6	16.7	10.5	56.6	31.9	0.3	4.7	2.5		1.4	0.4	25.4	7.2
max	20.7	41.3	30.2	57.3	97.1	75.0	1.5	8.9	4.3		3.8	3.0	76.9	15.2
avg	16.6	34.2	25.3	24.7	77.4	49.8	0.8	6.1	3.3	324.5	2.5	1.1	50.7	9.6

Explanation of Symbols:

- All data unavailable for day
- * More than two hours of data unavailable
- + Two hours or less of data unavailable
- (no symbol) All data available for day

Table 16. Kettleman City monthly weather and wind summary for July.

Day	T (°C)			RH (%)			S (m s ⁻¹)			θ (deg)	U (m s ⁻¹)	φ _θ (deg)		
	min	max	avg	min	max	avg	min	max	avg			min	max	avg
1	15.2	31.8	23.9	21.6	77.6	46.6	1.0	5.5	3.0	324.8	2.6	1.3	42.8	10.1
2	15.8	33.6	24.2	22.3	76.6	46.6	0.4	6.6	3.2	338.3	2.3	1.5	47.2	10.3
3	11.4	28.6	20.4	29.8	83.7	54.1	0.4	4.8	2.8	340.2	2.4	1.6	56.7	11.7
4	11.5	31.0	20.7	25.3	83.8	54.6	0.5	4.5	2.7	333.6	1.8	0.8	71.4	10.6
5	13.8	28.5	21.3	32.0	78.5	55.3	1.2	8.2	3.8	332.7	3.4	2.0	35.8	10.1
6	13.4	30.2	21.5	31.6	83.1	57.7	1.1	8.5	3.4	329.6	3.0	0.8	58.7	10.9
7	13.4	28.4	21.2	34.2	82.7	56.5	0.8	7.1	3.6	330.6	3.3	1.2	66.5	10.3
8	13.3	31.2	21.6	27.9	87.8	59.3	0.9	7.3	3.0	330.9	2.4	0.8	62.0	11.8
9	15.7+	31.2+	23.3+	29.5	85.6	56.7	1.0	4.7	3.1	321.4	2.7	0.7	47.0	8.1
10	15.0	32.4	24.4	29.2	79.8	55.7	0.8	4.7	2.9	326.5	2.1	0.9	67.0	8.1
11	16.4	32.5	24.9	31.1	85.0	57.5	1.6	5.4	3.4	322.7	3.0	1.0	19.1	6.9
12	17.4	32.0	24.8	27.1	82.5	53.2	0.5	6.7	3.2	315.9	2.7	0.9	66.0	10.9
13	15.2	33.5	23.2	32.2	86.2	61.5	1.0	4.9	3.2	321.9	2.6	0.8	41.6	8.7
14	16.5	35.5	24.7	27.1	86.4	61.2	1.0	4.3	2.7	319.2	2.3	0.7	54.5	8.1
15	18.1	37.7	26.1	24.0	82.6	52.3	1.2	5.5	3.2	324.2	2.7	1.3	34.9	7.7
16	16.3	31.4	23.6	30.7	83.0	54.2	0.6	6.4	3.3	327.4	2.8	0.7	39.3	8.6
17	13.9	29.7	21.4	34.3	90.2	63.7	1.6	5.1	3.4	324.1	2.9	1.1	30.2	8.6
18	14.5	31.8	22.6	32.4	86.3	61.6	1.1	5.5	3.6	325.7	3.2	1.2	22.6	7.4
19	15.2	32.8	24.1	28.2	80.2	52.9	1.1	6.0	3.8	319.0	3.2	0.7	18.5	6.2
20	15.1	33.1	24.4	24.8	82.7	53.6	0.5	4.9	3.5	317.9	3.0	0.7	52.6	6.8
21	15.8	36.4	25.6	24.7	84.8	53.2	0.9	5.5	3.3	321.7	2.8	0.9	50.4	7.4
22	15.4	33.3	24.0	23.8	78.6	53.4	1.9	5.3	3.7	322.2	3.2	0.5	36.0	6.8
23	16.3	34.3	25.6	25.5	84.9	54.3	0.7	5.3	3.2	317.4	2.6	0.5	62.6	6.8
24	18.0	35.1	26.8	25.6	76.5	52.4	0.7	5.4	3.3	319.6	2.7	0.7	49.2	7.2
25	17.5	35.3	26.2	25.0	86.4	53.6	1.1	4.9	3.1	328.1	2.4	0.7	38.7	7.4
26	17.0	32.9	24.8	28.1	81.8	51.3	0.4	6.3	3.5	338.6	2.7	1.5	77.1	9.7
27	14.6	31.5	22.4	26.4	82.1	57.8	1.4	4.7	3.3	317.0	2.8	0.5	30.1	7.1
28	15.5	33.8	24.6	26.1	85.5	60.2	0.4	5.0	3.0	321.5+	2.6+	0.2+	63.3+	7.5+
29	16.6	35.9	26.4	24.2	84.3	56.0	0.5	4.7	2.9	318.0	2.2	0.4	71.5	8.5
30	20.0	36.6	27.8	24.5	73.8	51.8	0.8	5.3	3.4	315.2	2.9	0.5	21.8	5.6
31	19.8	36.0	27.7	31.1	74.3	54.7	0.9	4.9	2.9	320.0	2.2	0.3	26.8	6.6
min	11.4	28.4	20.4	21.6	73.8	46.6	0.4	4.3	2.7		1.8	0.2	18.5	5.6
max	20.0	37.7	27.8	34.3	90.2	63.7	1.9	8.5	3.8		3.4	2.0	77.1	11.8
avg	15.6	32.8	24.0	27.8	82.5	55.3	0.9	5.6	3.2	324.6	2.7	0.9	47.2	8.5

Explanation of Symbols:

- All data unavailable for day
- * More than two hours of data unavailable
- + Two hours or less of data unavailable

(no symbol) All data available for day

Table 17. Kettleman City monthly weather and wind summary for August.

Day	T (°C)			RH (%)			S (m s ⁻¹)			θ (deg)	U (m s ⁻¹)	φ _θ (deg)		
	min	max	avg	min	max	avg	min	max	avg			min	max	avg
1	22.1	39.1	29.7	21.0	78.5	53.2	0.5	6.4	3.0	333.1	1.9	1.2	61.5	8.5
2	22.0	42.2	31.5	23.6	76.1	48.4	0.5	6.2	2.6	337.5	1.5	0.8	49.3	8.7
3	22.6	42.5	30.9	23.0	78.9	43.7	0.4	5.4	2.4	322.2	0.8	1.9	55.6	9.5
4	19.6	34.6	27.0	35.0	78.3	55.8	2.0	5.0	3.5	323.6	3.2	0.3	18.5	6.7
5	20.0	35.3	27.3	29.7	78.1	52.5	1.5	5.0	3.4	323.5	2.9	1.1	17.7	7.3
6	17.0	37.5	27.1	20.8	83.1	49.6	0.8	5.4	2.9	324.6	2.2	0.5	48.9	9.6
7	17.8	37.8	26.2	21.1	80.6	52.8	0.6	5.0	2.9	337.5	1.9	0.9	44.7	8.7
8	16.6	36.9	25.2	28.1	85.9	56.3	0.7	5.6	3.0	323.9	1.5	1.0	48.2	8.6
9	16.3	37.6	25.7	19.5	85.1	52.5	0.9	6.2	3.1	330.6	1.3	1.3	36.5	8.3
10	14.4	30.7	22.4	31.2	89.3	60.5	0.9	5.8	3.5	327.5	3.1	0.8	35.5	8.1
11	14.9	33.1	23.4	22.8	86.1	57.7	1.1	5.4	3.0	325.7	2.3	0.5	30.1	8.3
12	15.3	38.8	25.7	15.4	81.7	50.7	0.6	5.3	2.7	311.0+	1.9+	0.3+	55.9+	8.7+
13	16.4	35.2	25.1	17.8	79.4	46.5	0.6	5.9	3.7	317.9	3.1	0.6	30.3	6.5
14	13.9	34.0	24.5	16.5	82.9	50.2	0.3	5.3	3.3	313.1	2.6	0.4	52.3	6.5
15	16.0	35.5	25.4	18.6	80.1	49.9	1.4	5.5	3.4	320.0	3.0	0.3	18.9	5.8
16	16.9	35.0	25.8	22.7	76.8	49.5	1.3	5.1	3.5	310.9	2.9	0.0	27.3	5.6
17	16.7	37.9	26.6	19.7	83.1	50.2	0.6	5.8	2.8	334.1+	1.8+	0.7+	53.9+	9.3+
18	13.9	34.2	24.1	16.3	86.0	48.5	0.3	5.5	2.8	320.7	2.1	0.9	43.6	8.7
19	13.1	31.3	22.4	19.7	86.5	51.6	0.5	5.7	3.0	332.7	2.2	0.8	52.8	9.8
20	13.1	31.7	22.0	21.5	85.2	53.5	0.4	5.2	2.8	326.9	2.0	0.6	45.1	9.8
21	13.7	36.5	24.1	20.7	84.4	51.4	0.4	4.7	2.3	337.9	1.0	0.6	58.5	10.5
22	15.5	37.5	24.7	23.2	78.1	51.6	0.7	5.1	3.0	344.1	1.8	0.5	44.5	8.3
23	15.4	36.9	24.3	26.3	83.7	56.3	0.8	6.5	3.1	327.0	2.6	1.0	71.0	8.7
24	14.7	33.1	23.1	27.2	87.9	61.4	1.4	5.6	3.6	325.3	3.2	0.8	21.7	6.9
25	16.9	35.6	26.0	23.2	79.6	50.1	0.3	5.2	2.7	323.7	1.6	0.5	59.3	11.1
26	17.8	39.3	26.9	20.1	69.6	46.2	0.5	4.9	2.8	317.2	2.1	0.6	70.6	9.2
27	17.5	36.7	26.6	24.1	72.6	45.2	0.4	5.3	2.4	315.0	1.9	0.7	69.3	11.1
28	16.6	35.1	25.9	21.0	74.3	46.1	0.9	5.7	3.2	329.3	2.6	0.6	41.2	8.3
29	17.7	26.5	22.6	45.0	79.8	59.9	1.1	5.7	3.0	325.2	2.7	1.4	20.5	7.4
30	14.6	27.7	21.2	43.7	87.5	64.8	0.7	7.2	3.3	340.0	2.2	1.0	32.3	9.4
31	13.6	28.7	20.7	37.9	90.8	63.2	0.7	7.0	2.9	294.5	2.1	0.7	71.9	12.6
min	13.1	26.5	20.7	15.4	69.6	43.7	0.3	4.7	2.3		0.8	0.0	17.7	5.6
max	22.6	42.5	31.5	45.0	90.8	64.8	2.0	7.2	3.7		3.2	1.9	71.9	12.6
avg	16.5	35.3	25.3	24.4	81.6	52.6	0.8	5.6	3.0	324.3	2.2	0.8	44.8	8.6

Explanation of Symbols:

- All data unavailable for day
- * More than two hours of data unavailable
- + Two hours or less of data unavailable
- (no symbol) All data available for day

Table 18. Kettleman City monthly weather and wind summary for September.

Day	T (°C)			RH (%)			S (m s ⁻¹)			Θ (deg)	U (m s ⁻¹)	σ_Θ (deg)			
	min	max	avg	min	max	avg	min	max	avg			min	max	avg	
1	14.9	28.2	20.7	34.8	86.6	59.9	0.6	6.4	3.0	357.4	1.3	1.0	76.0	11.7	
2	13.8	24.5	19.0	48.3	92.1	69.1	0.4	6.1	2.9	319.2	2.2	0.7	64.7	10.8	
3	15.7	27.8	20.1	32.3	81.7	56.4	1.0	8.6	3.6	336.7	3.3	1.3	68.7	11.8	
4	10.5	26.2	18.4	30.6	84.2	52.1	0.7	6.8	4.4	342.2	3.9	1.0	57.0	10.1	
5	9.6	26.5	17.8	25.6	77.6	52.9	1.0	7.8	4.4	329.2	3.8	0.7	39.4	8.2	
6	8.9	29.5	19.2	21.5	78.8	48.3	0.5	5.6	2.8	318.2	2.0	0.8	51.5	11.4	
7	10.0	33.0	21.4	19.8	77.8	46.3	0.4	4.4	2.5	301.4	1.8	0.4	62.8	11.8	
8	10.9	34.6	23.2	14.0	82.7	43.8	0.5	5.1	2.3	318.4	1.6	0.6	55.6	10.8	
9	12.1	37.0	22.9	14.3	70.7	42.9	0.5	5.2	3.0	318.0	1.9	0.6	60.4	10.2	
10	11.5	37.1	22.5	16.6	76.8	48.2	0.8	4.9	2.9	322.0	2.0	0.4	50.8	9.7	
11	11.9	36.9	23.2	14.8	77.3	44.3	0.6	5.0	2.7	317.5	1.7	0.4	64.5	9.5	
12	12.7	31.5	22.2	24.0	70.1	48.5	0.5	4.8	2.6	306.1	2.1	0.4	60.1	6.9	
13	16.6	39.2	26.4	18.8	74.9	41.8	0.2	5.2	2.2	300.7	1.4	1.0	63.0	10.6	
14	16.1	33.3	24.7	30.5	71.3	52.4	1.3	7.7	3.8	328.6	3.4	1.4	32.9	9.4	
15	16.5	30.3	22.9	35.0	83.3	59.5	1.5	6.8	4.1	330.7	3.8	1.2	20.5	7.8	
16	13.7	31.4	22.3	30.6	83.3	56.6	1.5	6.0	3.9	327.6	3.4	0.3	34.3	7.6	
17	14.1	33.8	23.6	27.9	80.6	53.8	0.5	4.4	2.7	309.0	2.3	0.5	50.3	9.0	
18	14.5	36.9	25.2	23.5	80.7	50.0	0.4	5.3	2.5	312.9	1.9	0.4	63.9	10.2	
19	14.9	37.9	26.2	17.4	77.6	45.5	0.4	4.9	2.3	325.0	1.5	0.5	58.5	9.8	
20	17.4	39.5	27.6	18.0	71.0	43.4	0.2	4.4	2.1	329.9	0.8	0.4	78.0	13.0	
21	17.0	29.8	22.3	32.6	75.9	53.6	0.4	9.6	4.5	284.6	3.3	1.8	75.9	12.7	
22	16.3*	19.2*	18.4*	62.4*	73.0*	65.2*	1.3*	6.3*	3.9*	297.3*	3.7*	2.3*	10.3*	6.9*	
23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
24	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
25	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
26	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
27	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
28	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
29	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
30	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	min	8.9	19.2	17.8	14.0	70.1	41.8	0.2	4.4	2.1		0.8	0.3	10.3	6.9
	max	17.4	39.5	27.6	62.4	92.1	69.1	1.5	9.6	4.5		3.9	2.3	78.0	13.0
	avg	13.6	32.0	22.3	27.0	78.5	51.6	0.7	6.0	3.1	320.1	2.3	0.8	54.5	10.0

Explanation of Symbols:

- All data unavailable for day
- * More than two hours of data unavailable
- + Two hours or less of data unavailable
- (no symbol) All data available for day

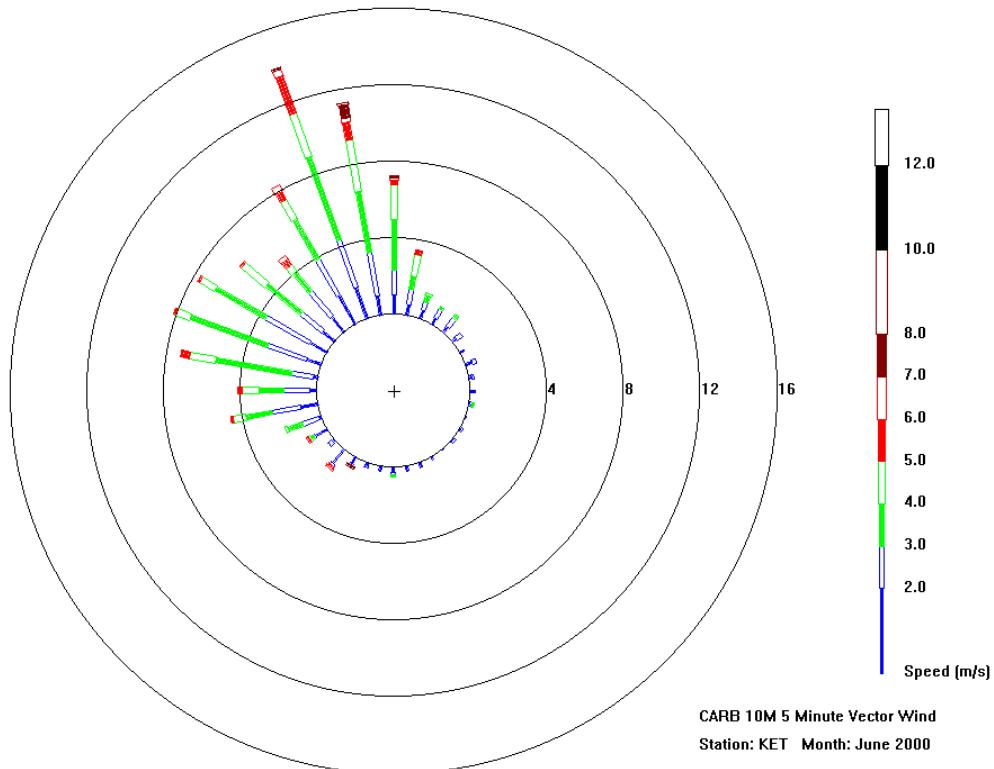


Figure 33. Kettleman City wind rose for June.

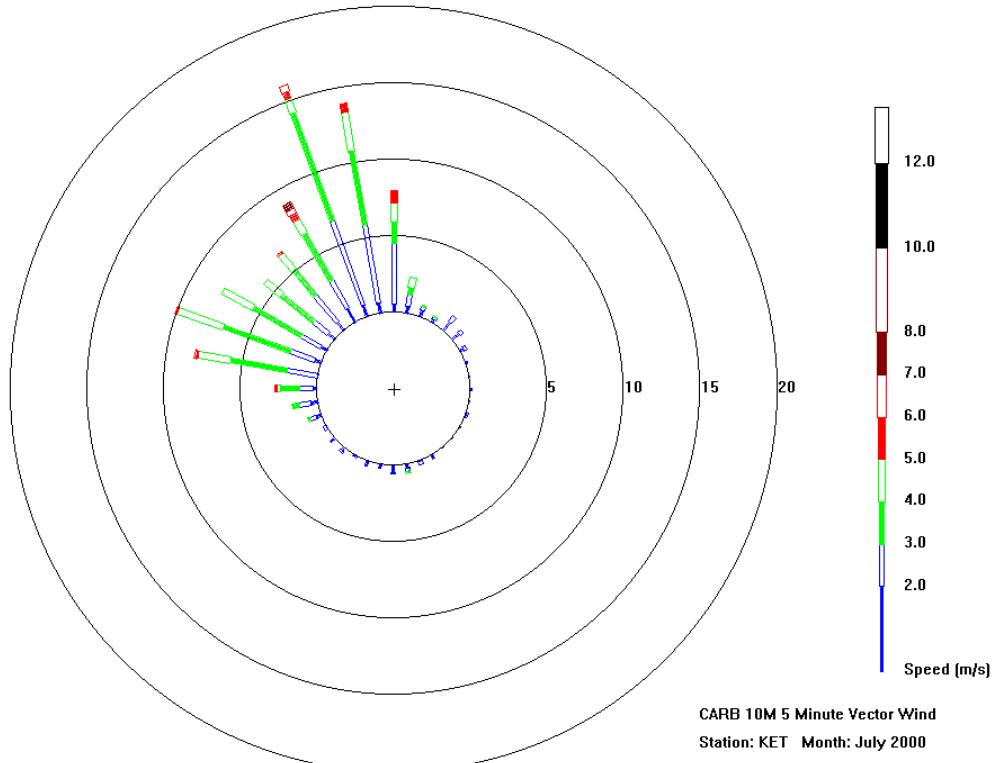


Figure 34. Kettleman City wind rose for July.

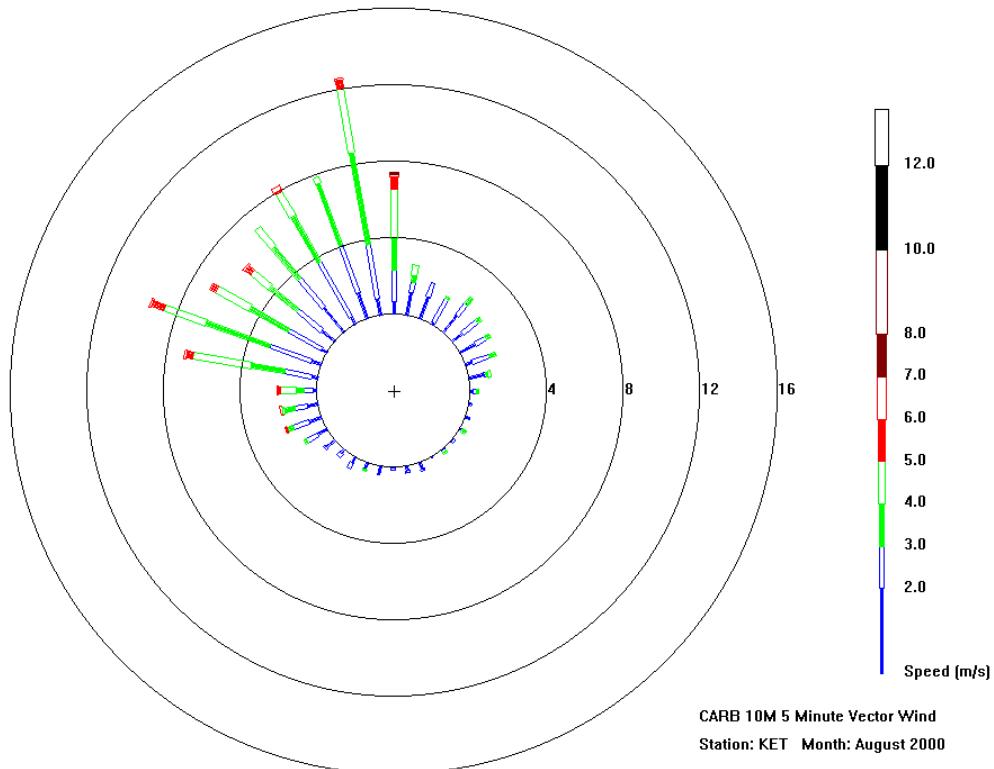


Figure 35. Kettleman City wind rose for August.

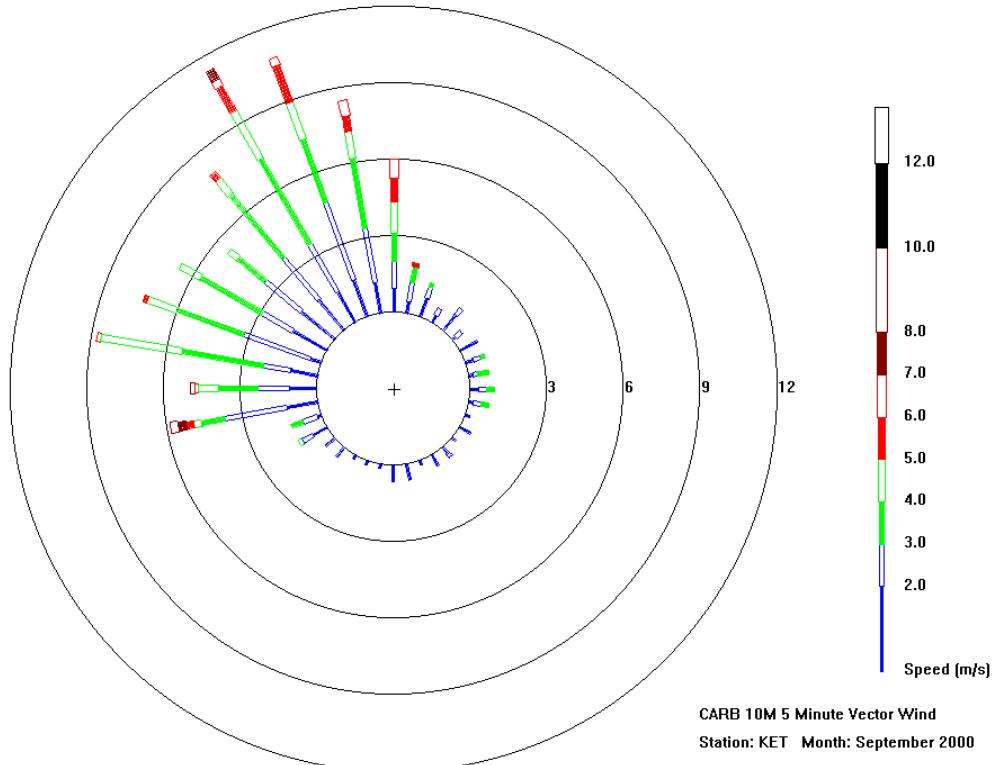


Figure 36. Kettleman City wind rose for September.